

# The contribution of Chinese FDI to Africa's growth

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*In the three years before the global crisis, the average GDP growth in sub-Saharan Africa was around 6%. This period also saw significant Chinese foreign direct investment flowing into the continent. This column uses growth-accounting methods to assess what portion of this growth can be attributed to Chinese FDI. Although for some countries and years the effects were negligible, some countries saw total GDP growth from 2002 to 2009 increase by 0.5 percentage points due to Chinese FDI alone.*

In the three years before the 2008 financial crisis, GDP growth in sub-Saharan Africa (averaged over individual economies) was around 6%, 2 percentage points above the mean growth in the preceding ten years. This period also coincided with significant Chinese foreign direct investment (FDI) flows into these countries, accounting for as much as 10% of total inward FDI for some countries. In our research (Weisbrod and Whalley 2011) we use growth-accounting methods to assess what portion of this elevated growth can be attributed to Chinese inward FDI.

## Chinese FDI flows to Africa

Chinese FDI over this period was uneven in both country and sectoral coverage. It was heavily concentrated in a relatively small number of countries and in natural resources. The majority of this FDI was new investment, with the notable exception of the purchase of a significant position in a major South African bank in 2008. Given the large number of African countries, we focus on the largest economies and the largest recipients of Chinese inward FDI. We consider 13 economies (Angola, Botswana, the Democratic Republic of the Congo (DRC), Ethiopia, Ghana, Kenya, Madagascar, Niger, Nigeria, South Africa, Sudan, Tanzania, and Zambia) accounting for 78% of sub-Saharan African GDP, and 92% of Chinese FDI flows between 2003 and 2009.

## Growth accounting and the contribution of Chinese FDI to African growth

We follow Solow (1957), Dennison (1962), and others and use data for individual economies between 1990 and 2009 to first calculate Solow residuals. We use capital stock, workforce, and factor-share data by country. Capital stock data is unavailable directly, so we use perpetual-inventory methods to construct the data. Factor shares come from the UN National Accounts data or the World Bank World Development Indicators, depending on the calculation method (this is further addressed in our paper).

We use data on Chinese FDI inflows by country to decompose capital stock estimates by country for the years 2003–9 into a portion due to Chinese inflows,

and a remaining non-Chinese FDI portion.<sup>1</sup> Removing Chinese FDI-driven capital stock data in the growth accounting enables us to assess what growth would have been without Chinese FDI.

We run counterfactual growth-accounting experiments for 13 sub-Saharan African countries, both for the three years 2005–7 and for the longer period 2003–9. Our estimates of Chinese FDI's contribution to the GDP growth vary by nation and by year. There are years where GDP growth was elevated by one half of a percentage point (most notably Zambia from 2006–8 with 0.44–0.67% per annum, Niger in 2007 at 0.38%, and the DRC in 2009 at 0.65%). Although for some countries and years, the effects were smaller or even negligible, some countries saw total GDP growth over the total period (i.e. the growth in GDP from 2002–9) increase by 0.5 percentage points or more due to inward Chinese FDI alone. The contribution of Chinese FDI to sub-Saharan African growth also expanded from having significant growth effects in a relatively small group of core countries (Nigeria, Niger, Sudan, Zambia and, to a lesser extent, the DRC) in the years preceding the world financial crisis (2005–7) to also producing noticeable, even if smaller, growth effects in a wider range of sub-Saharan African countries during the years of the crisis (2008–9). These results suggest that a significant, even if in some cases small, amount of the elevated growth in sub-Saharan Africa in recent years can be attributed to Chinese inward investment.

## Caveats and results

Several caveats apply to both the data and the use of growth-accounting techniques for this purpose. One is that exploration expenses in natural resources are largely expensed, which tends to understate the investment estimates used to construct capital stock data in some key countries. Another is that factor-share data in African national accounts are typically based on wages paid, and so returns to smallholders fully show as capital in use. This use of share data biases the contribution of investment to growth rates upward. Finally, ideally a clear separation is needed between greenfield Chinese investment and purchase of existing assets when using Chinese FDI data for our purposes, and we make some modifications to FDI data for this.

Despite these caveats, our results are suggestive of a significant, even if in some cases small, contribution of Chinese FDI to elevated African growth, a feature which is likely to be even more pronounced post-crisis since Chinese FDI into Africa has increased further.

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<sup>1</sup> Although data for Chinese inward outward FDI is available for 2010, country-level data for our recipient countries only go up to 2009 so it is currently not possible for our experiments to include 2010

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